What is claimed is:

1. A method of digital processing for predicting thin film dielectric properties, comprising:

a reference data base;

measuring chemical bonding parameters of said thin film dielectric;

software based algorithms that predict thin film behavioral characteristics based on thin film parameters;

a software based function that combines said chemical bonding parameters with said predicted thin film behavioral characteristics thereby predicting dielectric properties of said thin film;

a data interconnect between said reference data base and said software based algorithms;

a data interconnect between said software based algorithms and said software based function that combines said chemical bonding parameters with said predicted thin film behavioral characteristics;

an output medium for outputting said predicted dielectric properties of said thin film;

an input medium to said reference data base for supplying said predicted dielectric properties of said thin film to said reference data base; and

an input medium to said reference data base for supplying said measured chemical bonding parameters of said thin film dielectric of said thin film to said reference data base.

2. The method of claim 1 wherein said chemical bonding parameters of said thin film dielectric that are supplied to said reference data base include user defined attributes for further defining said thin film dielectric.

3. The method of claim 1 wherein for each thin film dielectric said reference data base contains different types of data segments for defining thin film dielectrics whereby said reference data base provides an indication of the different types of data defining thin film dielectrics.

4. The method of claim 1 wherein said input medium to said reference data base for supplying said predicted dielectric properties of said thin film to said reference data base and said input medium to said reference data base for supplying said measured chemical bonding parameters of said thin film dielectric of said thin film to said reference data base stores different stages of calculation results in said reference library whereby said behavioral prediction algorithms use stored values of the

measured chemical bonding parameters and said predicted dielectric properties.

5. The method of claim 1 whereby said behavioral prediction algorithm uses mixing and splitting rules to predict at least one of mixing and splitting of thin film dielectric prediction.

6. An apparatus of a digital processor for predicting thin film dielectric properties, comprising:

input means for enabling user definition of a desired thin film dielectric formed of a multiplicity of streams of data elements, including at least one thin film dielectric component;

a data assembly coupled to said input means for holding data of the desired thin film dielectric, for each thin film dielectric the data assembly representing the thin film dielectric as a collection of segments and a set of attributes, the collection of segments and set of attributes defining the thin film dielectric, the data assembly utilizing an attribute set table that provides thin film dielectric characteristics in a standardized manner from one thin film dielectric to another and provides distribution function information for describing thin film dielectric properties, such that said table specifies properties of one or more thin film dielectrics to support predicting of a variety of thin film dielectrics;

means for placing and holding data of the desired thin film dielectric in said data assembly coupled to said input means for each thin film dielectric; and

processor means for predicting thin film dielectric properties by mathematically modeling stream flow and element operation of the thin film dielectric whereby the mathematical modeling includes predicting thin film properties and attributes values of the thin film dielectric, based on said distribution functions, said data using data stored in said data assembly according to the attribute set table.

7. The apparatus of claim 6 wherein said user definition of a desired thin film dielectric is chemical bonding measurements that indicate and reflect at least one thin film dielectric.

8. The apparatus of claim 6 wherein said user definition of a desired thin film dielectric further includes user defined attributes for further definition of said thin film dielectric.

9. The apparatus of claim 6 wherein said data assembly provides different types of segments for defining a thin film dielectric and, for each thin film dielectric, provides an indication of the different types of segments defining said thin film dielectric.

10. The apparatus of claim 6 wherein said processing means for predicting thin film dielectric properties further stores calculation results of different stages of calculation, such that during mathematical modeling of each stream, the processor means uses stored values of the collection of segments and set of attributes of each thin film dielectric as held in said data assembly.

11. The apparatus of claim 6 wherein said processor means further utilizes mixing and splitting rules to mathematically predict at least one of mixing and splitting of streams.

12. The apparatus of claim 6 with the addition of the means to place and hold predicted data of the desired thin film dielectric in said data assembly coupled to an input means to said data assembly for each thin film dielectric.

13. A method applied using a digital processor for predicting thin film dielectric properties, comprising:
providing input means to the digital processor for enabling user definition of a desired thin film dielectric formed of a multiplicity of streams of data elements, including at least one thin film dielectric component;

providing a data assembly coupled to said input means for holding data of the desired thin film dielectric, for each thin film dielectric the data assembly representing the thin film dielectric as a collection of segments and a set of attributes, the collection of segments and set of attributes defining the thin film dielectric, the data assembly utilizing an attribute set table that provides thin film dielectric characteristics in a standardized manner from one thin film dielectric to another and provides distribution function information for describing thin film dielectric properties, such that said table specifies providing properties of one or more thin film dielectrics to support predicting of a variety of thin film dielectrics;

providing processor means for predicting thin film properties by mathematically modeling stream flow and element operation of the thin film dielectric whereby the mathematical modeling includes predicting thin film properties and attributes values of the thin film dielectric, based on said distribution functions, said data using data stored in said data assembly according to the attribute set table; and

providing the means to place and hold predicted data of the desired thin film dielectric in said data assembly coupled to providing an input means to said data assembly for each thin film dielectric.

14. The method of claim 13 wherein said user definition of a desired thin film dielectric is chemical bonding measurements that indicate and reflect at least one thin film dielectric.

15. The method of claim 13 wherein said user definition of a desired thin film dielectric further includes user defined attributes for further definition of said thin film dielectric.

16. The method of claim 13 wherein said data assembly provides different types of segments for defining a thin film dielectric and, for each thin film dielectric, provides an indication of the different types of segments defining said thin film dielectric.

17. The method of claim 13 wherein said processing means further stores calculation results of different stages of calculation, such that during mathematical modeling of each stream, the processor means uses stored values of the collection of segments and set of attributes of each thin film dielectric as held in said data assembly.

18. The method of claim 13 wherein said processor means further utilizes mixing and splitting rules to mathematically predict at least one of mixing and splitting of streams.